

**Syllabus for MTH 2310 (formerly U230): Discrete Mathematics**  
**Fall 2009**

The course provides the discrete portion of the mathematical background needed by students in electrical and computer engineering.

**Instructor:** Daniel Labardini, 537 NI, ext. 5674, labardini-fra.d@neu.edu

**Time and place:** M, W, Th, 10:30 AM - 11:35 AM, 431 RY.

**Office Hours:** M, W, Th 11:45 AM - 12:45 PM or by appointment.

**Text:** Kenneth Rosen, *Discrete Mathematics and its Applications (6<sup>th</sup> edition)*. WCB/McGraw-Hill, 2006.

**Webpage:** <http://myfiles.neu.edu/labardini-fra.d/teaching/F09U230.html>

**Homework Assignment:** Although the homework is not counted in grading, the quizzes and tests will consist of similar problems, so doing it is very essential.

**Quizzes:** There will be several quizzes. The dates will be announced later.

**Grading:** Course grades will be determined using

- Quizzes 40%
- Midterm 20%
- Final exam 40%

**Various Policies:**

- Homework assignments and course announcements will be posted at the webpage the instructor has designed for the course.
- You are responsible for information conveyed in class (even if you are absent) or posted at the webpage designed for the course.
- The Instructor reserves the right to make changes to the syllabus. Any such change will be properly conveyed in class and posted at the webpage designed for the course.
- Except in cases of documented emergencies, there will be *no makeups* of quizzes or midterm.
- If you have a concern about the course that cannot be resolved by speaking with me, please contact the Course Coordinator, Prof. Andrei Zelevinsky, 431 LA, x5648, andrei@neu.edu.
- All students without legitimate conflicts (approved by the instructor) will take the final exam at the scheduled time. Do not make travel plans that conflict with the final exam.
- It is University policy that no grade, including an Incomplete, can be changed after one year; exceptions must be authorized by the Academic Standing Committee.
- Academic dishonesty will not be tolerated. Academic dishonesty on a quiz or exam or assignment will lead to a zero on the quiz or exam or assignment, that cannot be made up, as well as a letter detailing the incident to the Office of Student Conduct and Conflict Resolution. The minimum penalty for a finding of academic dishonesty by the student Judicial Hearing Board includes one year disciplinary probation. For more information, please see

<http://www.northeastern.edu/osccr/academichonesty.html> or the Student Handbook.

**Mathematics Tutorial Center:**

- Free tutoring is available to all students at the Mathematics Tutorial Center (MTC), 540B Nightingale (x2438). All tutoring is done on a first come first served basis. Students must go in person to schedule appointments. The MTC Spring 09 schedules are: M, T, W, 10:00 AM - 9:00 PM; Th, 10:00 AM - 6:00 PM; F, 10:00 AM - 1:00 PM.

**Important Dates:**

- No classes on October 12 (Columbus day), November 11 (Veterans' day), November 25 - 29 (Thanksgiving recess).
- Last day to drop a class: Tuesday, September 29 (without a "W"); Friday, November 20 (with a "W").
- Last day to file a Final Exam Conflict Form: Wednesday, September 23.
- Final Exam: TBA.

**Order of Sections Covered**

- 1.1 Propositional logic.
- 1.2 Propositional equivalences
- 2.1 Sets
- 2.2 Set operations
- 2.3 Functions
- 11.1 Boolean functions
- 11.2 Representing Boolean functions
- 11.3 Logic gates
- 2.4 Sequences and summations
- 4.1 Mathematical induction
- 4.3 Recursive definitions and structural induction
- 5.1 The basics of counting
- 5.3 Permutations and combinations
- 5.4 Binomial coefficients
- 7.1 Recurrence relations
- 7.2 Solving linear recurrence relations
- 7.5 Inclusion-exclusion
- 7.6 Applications of inclusion-exclusion
- 9.1 Graphs and graph models
- 9.2 Graph terminology
- 9.3 Representing graphs and graph isomorphism
- 9.4 Connectivity
- 10.1 Introduction to trees
- 10.4 Spanning trees

**Note:** The Final Exam will be cumulative, and will cover all above topics (unless otherwise announced).